RESEARCH ARTICLE

Association of rs1057035polymorphism in microRNA biogenesis pathway gene (*DICER1*) with azoospermia among Iranian population

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Abstract Since genes involved in microRNA biogenesis pathways have a main role in impaired spermatogenesis, in this research, we evaluated different genotypes frequency of seven single-nucleotide polymorphisms in *DICER1* and *DROSHA* genes. Different genotypes frequency of *DICER1* (rs12323635, rs1057035, rs13078 and rs3742330) and *DROSHA* (rs10719, rs642321 and rs2291102) were determined by sequencing method in 385 infertile men and 120 fertile controls. It was found that CC genotype (P = 0.000) and C allele (P = 0.0) of rs1057035 T > C polymorphism were associated with idiopathic male infertility (azoospermia). Gene expression study in blood and testis samples was done by real time PCR technique. Our results showed significant under expression of *DICER1* gene in blood and testis tissues of azoospermic samples (P < 0.05), but we did not observed significant difference in expression ratio between infertile men with and without C allele of rs1057035 SNP (P > 0.05). The results of this study showed that among the studied variants, only one of them in *DICER1* might be associated with azoospermia, but additional studies needs in different populations and ethnics.

Keywords DICER1 · DROSHA · Polymorphisms · Male Infertil